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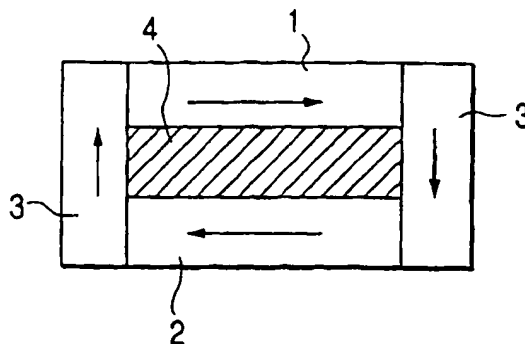
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(54) Magnetic thin-film memory element utilizing GMR effect, and magnetic thin-film memory

(57) A magnetic memory element comprising a first magnetic layer magnetized in an orientation of magnetization along one in-plane direction, a second magnetic layer magnetized in an orientation of magnetization parallel or antiparallel to the orientation of magnetization of the first magnetic layer, the second magnetic layer hav-

ing a higher coercive force than that of the first magnetic layer, a non-magnetic layer interposed between the first magnetic layer and the second magnetic layer, and a third magnetic layer for magnetically coupling the first magnetic layer with the second magnetic layer in order to form a closed magnetic circuit with the first magnetic layer and the second magnetic layer.

FIG. 4



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EUROPEAN SEARCH REPORT

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
1 X	WO 96 25740 A (INTEGRATED MICROTRANSDUCER ELE) 22 August 1996 (1996-08-22) * page 16, line 32 - page 18, line 12; figure 5 *	1	G11C11/15
1 X	US 5 173 873 A (WU JIIN-CHUAN ET AL) 22 December 1992 (1992-12-22) * column 4, line 11 - column 5, line 5; figures 3A,3B,3C * -----	1	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			G11C
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 9 September 1999	Examiner Beasley-Suffolk, D
CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background O: non-written disclosure P: intermediate document T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons &: member of the same patent family, corresponding document			

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